Maine Medical Center – Linen Processing Facility
Cumberland County
Westbrook, Maine
A-945-71-A-N

Departmental
Findings of Fact and Order
Air Emission License
New Minor Source

After review of the air emissions license application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

Maine Medical Center of Portland, Maine has applied for a new Air Emission License permitting the operation of emission sources associated with a proposed linen processing facility to be named Maine Medical Center – Linen Processing Facility and to be located in Westbrook, Maine.

B. Emission Equipment
The following equipment is addressed in this air emission license:

Fuel Burning Equipment

Equipment	Maximum Capacity (MMBtu/hr)	Maximum Firing Rate (scf/hr)	Fuel Type, % sulfur	Stack #
Boiler #1	6.28	6,098	Natural Gas	1
Boiler #2	1.38	1,340	Natural Gas	2

Process Equipment

Equipment	Production Rate	Pollution Control Equipment	Stack #
Dryer – 1	550 lbs/hr of linens	Lint Screens and Exhaust Recirculation	3
Dryer – 2	550 lbs/hr of linens	Lint Screens and Exhaust Recirculation	4

Dryer – 3	550 lbs/hr of linens	Lint Screens and Exhaust Recirculation	5
Dryer – 4	550 lbs/hr of linens	Lint Screens and Exhaust Recirculation	6
Dryer – 5	550 lbs/hr of linens	Lint Screens and Exhaust Recirculation	7

Miscellaneous Equipment

Other miscellaneous equipment and activities including, but not limited to laundering, repair and maintenance activities, office activities, janitorial activities, etc. will be located and will occur at the facility, however, this equipment and these activities are considered categorically exempt or insignificant as defined in Chapter 115, Appendix B, and are therefore not listed or addressed in this Air Emission License.

C. Application Classification

The emissions for the new source are determined by the maximum future license allowed emissions, as follows:

Pollutant	**Max. Future License (TPY)**	**Sig. Level**
PM	3.9	100
PM_{10}	3.9	100
SO_2	0.04	100
NO_x	5.6	100
CO	4.7	100
VOC	0.3	50

The Department has determined the facility is a minor source and the application has been processed through Chapter 115 of the Department's regulations.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment

(BPT), as defined in Chapter 100 of the Department regulations. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in Chapter 100 of the Department's regulations. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Boiler #1

Boiler #1 is a natural gas-fired steam generating boiler with a maximum heat input of 6.28 MMBtu/hr which will provide space heat for the facility. The boiler is a Cleaver Brooks firetube boiler (model CB-LE). The boiler includes their "Low Emission Option" which utilizes induced flue gas recirculation with an integral front head that route the flue gases from the fourth pass to the burner assembly for the purpose of reducing NO_x emissions.

NSPS requirements

The boiler has a maximum heat input of 6.28 MMBtu/hr, and is therefore not subject to the New Source Performance Standards (NSPS) Subpart Dc for steam generating units greater than 10 MMBtu/hr manufactured after June 9, 1989.

A summary of the BACT determination for Boiler #1 is the following:

1. Utilizing natural gas and operating and maintaining the boiler in accordance with the manufacturer's recommendations.
2. Chapter 103 regulates PM emission limits, however, the Department has determined that lower PM and PM_{10} limits are more appropriate.
3. SO_2, NO_x, CO, and VOC emission limits are based upon AP-42 data for natural gas combustion, dated 7/98.
4. Chapter 101 regulates visible emissions from boilers. The Department has determined the visible emissions limit for Boiler #1 based in part on Chapter 101. The Department finds that visible emissions from Boiler #1 shall not exceed 10% opacity on a six (6) minute block average.

C. Boiler #2

Boiler #2 is a natural gas-fired waste heat boiler with a maximum heat input of 1.38 MMBtu/hr which will utilize exhaust gases from Boiler #1 to provide hot water for the facility. The waste heat boiler is a Thermal Engineering of Arizona unit that will be operated and maintained in a manner to ensure good combustion.

NSPS requirements
The boiler has a maximum heat input of 1.38 MMBtu/hr, and is therefore not subject to the New Source Performance Standards (NSPS) Subpart Dc for steam generating units greater than 10 MMBtu/hr manufactured after June 9, 1989.

A summary of the BACT determination for Boiler #2 is the following:

1. Utilizing natural gas and operating and maintaining the boiler in accordance with the manufacturer's recommendations.
2. Chapter 103 regulates PM emission limits for fuel burning equipment having a rated capacity of 3 MMBtu/hr or greater. Boiler #2 has a rated capacity of less than 3 MMBtu/hr, so it is not subject to Chapter 103. The Department has determined PM and PM_{10} limits representative of BACT for natural gas-fired boilers.
3. SO_2, NO_x, CO, and VOC emission limits are based upon AP-42 data for natural gas combustion, dated 7/98.
4. Chapter 101 regulates visible emissions from boilers. The Department has determined the visible emissions limit for Boiler #2 based in part on Chapter 101. The Department finds that visible emissions from Boiler #2 shall not exceed 10% opacity on a six (6) minute block average.

D. Drying Tumblers (1-5)

Drying Tumblers (1-5) are used to dry the linens that are washed at the facility. Each drying tumbler has a capacity of 220 lbs/load @ 2-2.5 loads/hour (550 lbs/hr) and is fired with natural gas at a capacity of 1.1 MMBtu/hr. Each drying tumbler is equipped with a built-in lint screen and a portion of the exhaust is recirculated to minimize particulate emissions. The lint screens are mesh 41, which has a mesh width of 0.40 millimeters (mm). These screens are expected to have a capture efficiency of approximately 78%. Of the 22% that makes it through the screens, approximately 60% is recirculated through the burners and 40% is exhausted to the air. This equates to an overall particulate control efficiency of approximately 90%.

A summary of the BACT determination for the Drying Tumblers (1-5) is the following:

1. Chapter 103 regulates PM emission limits for fuel burning equipment having a rated capacity of 3 MMBtu/hr or greater. Each drying tumbler has a rated capacity of less than 3 MMBtu/hr so they are not subject to Chapter 103. The Department has determined PM and PM_{10} limits representative of BACT for natural gas-fired burners.

2. The drying tumblers also have PM and PM_{10} emissions from the process of drying the linen materials. The drying tumblers are equipped with lint screens and a portion of the exhaust is recirculated through the burners. An estimated overall PM control efficiency of approximately 90% was cited in the application, however the actual emission rate is dependent on several factors, including but not limited to the age and quality of the linens, filter condition, and the amount of exhaust leakage. The BACT determination for PM and PM_{10} emissions from the drying tumblers is to utilize natural gas and to properly operate and maintain the drying tumblers and related equipment in accordance with the manufacturer's recommendations, including the lint screens and exhaust recirculation systems.
3. SO_2, NO_x, CO, and VOC emission limits are based upon AP-42 data for natural gas combustion, dated 7/98.
4. Chapter 101 regulates visible emissions from process sources. The Department has determined the visible emissions limit for the drying tumblers based in part on Chapter 101. The Department finds that visible emissions from each drying tumbler shall not exceed 10% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a 1-hour period.

E. Annual Emissions

Maine Medical Center - Linen Processing Facility's annual air emission license fee is based on the following:

Total Licensed Annual Emissions for the Facility
Tons/year
(used to calculate the annual license fee)

	PM	**PM_{10}**	**SO_2**	**NO_x**	**CO***	**VOC**
Boiler #1	1.4	1.4	0.02	2.7	2.2	0.1
Boiler #2	0.3	0.3	0.004	0.6	0.5	0.03
Drying Tumblers (1-5 combined)	2.2	2.2	0.014	2.3	2.0	0.13
Total TPY	**3.9**	**3.9**	**0.04**	**5.6**	**4.7***	**0.3**

* note: CO emissions are not included in determining the annual license fee

III. AMBIENT AIR QUALITY ANALYSIS

According to the Maine Regulations Chapter 115, the level of air quality analyses required for a minor new source shall be determined on a case-by case basis. Based on the information available in the file, and the similarity to existing sources, Maine Ambient Air Quality Standards (MAAQS) will not be violated by this source.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-945-71-A-N subject to the following conditions.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

STANDARD CONDITIONS

(1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 MRSA §347-C).

(2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [MEDEP Chapter 115]

(3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an

extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [MEDEP Chapter 115]

(4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [MEDEP Chapter 115]

(5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353. [MEDEP Chapter 115]

(6) The license does not convey any property rights of any sort, or any exclusive privilege. [MEDEP Chapter 115]

(7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [MEDEP Chapter 115]

(8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [MEDEP Chapter 115]

(9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license. [MEDEP Chapter 115]

(10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license. [MEDEP Chapter 115]

(11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:

A. perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:

1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
2. pursuant to any other requirement of this license to perform stack testing.

B. install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and

C. submit a written report to the Department within thirty (30) days from date of test completion.

[MEDEP Chapter 115]

(12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:

A. within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and

B. the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and

C. the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

[MEDEP Chapter 115]

(13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [MEDEP Chapter 115]

(14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emission and that is not consistent with the terms and

conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [MEDEP Chapter 115]

(15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [MEDEP Chapter 115]

SPECIFIC CONDITIONS

(16) **Boiler #1**

A. Maine Medical Center – Linen Processing Facility shall utilize natural gas in the boiler and shall operate and maintain the boiler in accordance with the manufacturer's recommendations. [MEDEP Chapter 115, BACT]

B. Records of annual fuel use shall be kept on a 12-month rolling total basis. [MEDEP Chapter 115, BPT]

C. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler #1	PM	0.05	MEDEP, Chapter 115, BACT

D. Emissions shall not exceed the following [MEDEP Chapter 115, BACT]:

Emission Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	0.3	0.3	0.004	0.6	0.5	0.03

E. Visible emissions from Boiler #1 shall not exceed 10% opacity on a six (6) minute block average. [MEDEP Chapter 115, BACT]

(17) **Boiler #2**

A. Maine Medical Center – Linen Processing Facility shall utilize natural gas in the boiler and shall operate and maintain the boiler in accordance with the manufacturer's recommendations. [MEDEP Chapter 115, BACT]
B. Records of annual fuel use shall be kept on a 12-month rolling total basis. [MEDEP Chapter 115, BPT]
C. Emissions shall not exceed the following [MEDEP Chapter 115, BACT]:

Emission Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #2	0.1	0.1	0.001	0.1	0.1	0.01

D. Visible emissions from Boiler #2 shall not exceed 10% opacity on a six (6) minute block average. [MEDEP Chapter 115, BACT]

(18) **Drying Tumblers (1-5)**

A. Maine Medical Center – Linen Processing Facility shall utilize natural gas in the drying tumblers and shall operate and maintain the drying tumblers and related equipment, including the lint screens and exhaust recirculation systems, in accordance with the manufacturer's recommendations. [MEDEP Chapter 115, BACT]
B. Records of annual fuel use shall be kept on a 12-month rolling total basis. [MEDEP Chapter 115, BPT]
C. In an effort to minimize PM and PM10 emissions from the drying tumblers, the licensee shall properly operate and maintain the drying tumblers, including the lint screens and exhaust recirculation systems. [MEDEP Chapter 115, BACT]
D. Emissions from each of the drying tumblers shall not exceed the following [MEDEP Chapter 115, BACT]:

Emission Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Drying Tumblers (1-5)	0.2	0.2	0.001	0.1	0.1	0.01

E. Visible emissions from the Drying Tumblers (1-5) shall not exceed 20% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a 1-hour period. [MEDEP Chapter 115, BACT]

(19) **Payment of Annual License Fee**

Maine Medical Center – Linen Processing Facility shall pay the annual air emission license fee within 30 days of August 31st of each year. Pursuant to 38 MRSA §353-A, failure to pay this annual fee in the stated timeframe is sufficient grounds for revocation of the license under 38 MRSA §341-D, subsection 3.

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF 2006.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:_____
DAVID P. LITTELL, COMMISSIONER

The term of this license shall be five (5) years from the signature date above.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: June 7, 2006
Date of application acceptance: June 22, 2006

Date filed with the Board of Environmental Protection: _____

This Order prepared by Eric Kennedy, Bureau of Air Quality.